

WHAT IS CLAIMED IS:

1. A method for printing a pattern on a photosensitive surface using a maskless lithography system including a spatial light modulator (SLM), the method comprising:
 - defining two or more exposure areas within a predetermined region of the surface, each area corresponding to selected pixels of the SLM;
 - forming an overlapping region between the two or more exposure areas, the overlapping region being defined by respective overlapping edges of the exposure areas, the overlapping edges corresponding to overlapping pairs of the selected pixels from each area; and
 - alternately activating the pixels within each pair such that only one of the pixels within the pair is used to produce the pattern.
2. The method of claim 1, wherein the alternately activating step includes turning one pixel on and substantially simultaneously turning the other pixel off.
3. The method of claim 1, wherein opposite alternating pairs are distributed throughout the overlapping region such that the alternating pairs form an alternating pattern stitching area.

4. The method of claim 3, wherein the alternating pairs form a checkerboard pattern.
5. The method of claim 1, wherein the pattern forms an oscillating stitching line between the overlapping region.
6. The method of claim 1, further comprising the pattern redistributing within the overlapping region.
7. The method of claim 6, wherein the redistributing step includes spatially averaging stitching disturbances.
8. An apparatus configured for printing a pattern on a photosensitive surface using a maskless lithography system including a spatial light modulator (SLM), the apparatus comprising:
 - means for defining two or more exposure areas within a predetermined region of the surface, each area corresponding to selected pixels of the SLM;
 - means for forming an overlapping region between the two or more exposure areas, the overlapping region being defined by respective overlapping edges of the exposure areas, the overlapping edges corresponding to overlapping pairs of the selected pixels from each area; and
 - means for alternately activating the pixels within each pair such that only one of the pixels within the pair is used to produce the pattern.

9. The apparatus of claim 8, wherein the means for alternately activating is configured for turning one pixel on and substantially simultaneously turning the other pixel off.

10. The apparatus of claim 8, wherein opposite alternating pairs are distributed throughout the overlapping region such that the alternating pairs form an alternating pattern stitching area.

11. The apparatus of claim 10, wherein the alternating pairs form a checkerboard pattern.

12. The apparatus of claim 8, wherein the pattern forms an oscillating stitching line between the overlapping region.

13. The apparatus of claim 8, wherein the pattern is redistributed within the overlapping region.

14. The apparatus of claim 13, wherein the redistributing includes spatially averaging stitching disturbances.

15. A computer readable medium carrying one or more sequences of one or more instructions for execution by one or more processors to perform a method for printing a pattern on a photosensitive surface using a maskless lithography system including a spatial light modulator (SLM), the instructions when executed by the one or more processors, cause the one or more processors to perform the steps of:

defining two or more exposure areas within a predetermined region of the surface, each area corresponding to selected pixels of the SLM;

forming an overlapping region between the two or more exposure areas, the overlapping region being defined by respective overlapping edges of the exposure areas, the overlapping edges corresponding to overlapping pairs of the selected pixels from each area; and

alternately activating the pixels within each pair such that only one of the pixels within the pair is used to produce the pattern.